

What is claimed is:

1. A probe for scanning probe lithography,  
comprising:

5 a tip part, and a spring section,  
wherein said tip part is so structured that a  
part of a conductor thereof is covered with an  
insulator, and

10 wherein said conductor is so formed as to have  
a substantially uniform cross-sectional configuration  
perpendicular to a surface to be patterned through  
scanning.

2. A probe for scanning probe lithography  
15 as claimed in claim 1,

wherein said tip part including said conductor  
and said insulator is formed in a quadrangular pyramid  
shape having a flat apex at which an apex of said  
conductor is exposed.

20 3. A probe for scanning probe lithography  
as claimed in claim 1,

wherein said tip part including said conductor  
and said insulator is formed in a hemispherical shape  
25 with an end of said conductor exposed at the zenithal  
point thereof.

4. A probe for scanning probe lithography

as claimed in claim 1,

wherein, in said tip part including said conductor and said insulator, said conductor is formed in a cylindrical shape disposed along the center of said tip part, and the entire periphery of said conductor is covered with said insulator.

5. A probe for scanning probe lithography  
as claimed in claim 1,

10 wherein said conductor is formed in a rectangular parallelepiped shape.

6. A probe for scanning probe lithography  
as claimed in claim 1,

15 wherein said conductor is made of a hard conductive material selected from the group consisting of titanium, tungsten, molybdenum, titanium carbide, tungsten carbide, molybdenum carbide, graphite, conductive diamond, titanium nitride, tungsten nitride, molybdenum nitride, and carbon nanotube.

20 7. A probe for lithographic scanning probe  
as claimed in claim 1,

25 wherein said insulator is made of a hard insulating material selected from the group consisting of silicon dioxide, silicon nitride, and diamond.

8. A probe for scanning probe lithography

as claimed in claim 1,

wherein a plurality of mutually insulated conductors are provided in said tip part, and

5 wherein a potential for patterning is fed to one of said plural conductors or a combination thereof in an application of lithographic processing.

9. A probe of scanning probe lithography as claimed in claim 1,

10 wherein said spring section is of a cantilever type or of a double-end-support type.

10. A method of making a probe for scanning probe lithography, comprising the steps of:

15 preparing a silicon substrate having a predetermined crystal orientation, and opening a predetermined hole therein;

forming a silicon nitride layer having a predetermined thickness on said substrate;

20 opening, at the center of a hole shape arranged on said silicon nitride layer, a pit having a predetermined configuration which extends to said silicon substrate;

25 forming a conductive layer having a predetermined thickness on said silicon nitride layer;

forming a vending-correction layer having a predetermined thickness on said conductive layer;

carrying out, after formation of said vending-

correction layer, configuration processing of a spring section which is formed of said silicon nitride layer, said conductive layer and said vending-correction layer on said silicon substrate, and configuration processing of a holder joint part;

5 forming said spring section into a predetermined cantilever shape;

forming a holder at the base of said cantilever shape; and

10 removing said silicon substrate from said silicon nitride layer.

09646076-021200